

What is claimed is:

1. A mobile transportable electrostatic substrate holder, having a diameter and/or edge lengths matching a diameter and/or edge lengths of a substrate to be transported with a tolerance of less than 0.1 mm, locally, at certain locations, or everywhere.

2. A substrate holder according to claim 1, wherein an exposed area of the substrate holder that is not covered by the substrate to be transported is up to 30 mm thicker or up to 10 mm thinner, locally, at certain locations, or everywhere, than a covered area of the substrate holder covered by the substrate.

3. A substrate holder according to claim 1, having one or several holes and/or perforations in order to increase a holding force of the substrate holder acting on the substrate by utilizing the substrate holder simultaneously as a vacuum holder.

4. The substrate holder according to claim 1, wherein the substrate holder and/or a receptacle for the substrate holder has one or several bores and/or perforations for passing a gas therethrough for cooling the substrate and/or

for passing lifting and/or contact pins and/or sensors therethrough.

5. The substrate holder according to claim 1, wherein the substrate holder and/or the substrate is electrically charged and/or electrically discharged inside or outside of a processing machine through contact pins.

6. The substrate holder according to claim 1, wherein the substrate holder and/or the substrate is moveable by lifting pins.

7. The substrate holder according to claim 1, wherein in a front side of the substrate holder facing the substrate and/or in both sides of the substrate holder and/or in a surface of a receptacle of the substrate holder, one or several channels are provided that are connected to one or several bores for passing a cooling gas flow therethrough.

8. The substrate holder according to claim 1, wherein the substrate has a front side facing the substrate and a back side facing away from the substrate, wherein the back side and/or the front side has one or several sealing surfaces and/or seals.

9. The substrate holder according to claim 1, comprising seals comprised of solid polymers and/or solid metals or comprised of coatings made of polymers and/or metals, wherein the seals are provided locally or at several locations.

10. The substrate holder according to claim 1, wherein between the substrate and the substrate holder and/or between a receptacle for the substrate holder and the substrate holder one or several intermediate spaces are present for cooling with a cooling gas.

11. The substrate holder according to claim 1, wherein a cooling gas is guided in a circuit and is reusable.

12. The substrate holder according to claim 1, wherein in a receptacle for the substrate holder one or several sealing surfaces and/or seals are provided.

13. The substrate holder according to claim 1, having a front side facing the substrate and a back side, wherein at least one of the front side and the back side of the substrate holder and/or a receptacle for the substrate holder is textured by sawing, milling, turning, grinding and/or cutting, for example, by laser beam and/or electron beam,

wet-chemical etching, plasma etching, or sandblasting, preferably in a grid shape, in order to provide a cooling surface area as large as possible for a cooling gas.

14. The substrate holder according to claim 13, wherein the front side and/or the back side of the substrate holder and/or the receptacle is machined by grinding and/or lapping and/or polishing or milling or turning in order to generate flatness and a plane-parallel configuration.

15. The substrate holder according to claim 1, having a front side facing the substrate and a back side, wherein in at least one of the front side and the back side of the substrate holder locally, at certain locations, or everywhere one or several magnetic metals and/or non-magnetic metals, metal alloys and/or metalloids are introduced in the form of solid bodies and/or the front side and/or the back side of the substrate holder are coated locally, at certain locations or everywhere with one or several magnetic metals and/or non-magnetic metals, metal alloys and/or metalloids.

16. The substrate holder according to claim 1, having a front side facing the substrate and a back side, wherein in at least one of the front side and the back side one or several unipolar or/and multi-polar electrodes are present.

17. The substrate holder according to claim 1, wherein a receptacle for the substrate holder comprises one or several magnets.

18. The substrate holder according to claim 1, manufactured by glass multi-layer technology and/or ceramic multi-layer technology and/or plastic multi-layer technology.

19. The substrate holder according to claim 1, comprised of at least one of the materials selected from the group consisting of ceramics, glass material, photo-texture glass, glass ceramics, semiconductor materials, and plastic materials, and further comprising metals and/or metal alloys.

20. The substrate holder according to claim 1, having a front side facing the substrate and a back side, wherein at least one of the front side and the back side and/or a receptacle for the substrate holder is fine-machined by at least one of polishing, grinding, lapping, milling, and turning for achieving a high gas seal-tightness.

21. The substrate holder according to claim 1, configured to be electrically supplied, electrically charged and/or electrically discharged continuously or discontinuously.

22. A mobile transportable electrostatic substrate holder, having a diameter and/or edge lengths smaller by 0.1 mm to 30 mm, locally, at certain locations, or everywhere, than a diameter and/or edge lengths of a substrate to be transported.

23. A substrate holder according to claim 22, wherein an exposed area of the substrate holder that is not covered by the substrate to be transported is up to 30 mm thicker or up to 10 mm thinner, locally, at certain locations, or everywhere, than a covered area of the substrate holder covered by the substrate.

24. A substrate holder according to claim 22, having one or several holes and/or perforations in order to increase a holding force of the substrate holder acting on the substrate by utilizing the substrate holder simultaneously as a vacuum holder.

25. The substrate holder according to claim 22, wherein the substrate holder and/or a receptacle for the substrate holder has one or several bores and/or perforations for passing a gas therethrough for cooling the substrate and/or for passing lifting and/or contact pins and/or sensors therethrough.

26. The substrate holder according to claim 22, wherein the substrate holder and/or the substrate is electrically charged and/or electrically discharged inside or outside of a processing machine through contact pins.

27. The substrate holder according to claim 22, wherein the substrate holder and/or the substrate is moveable by lifting pins.

28. The substrate holder according to claim 22, wherein in a front side of the substrate holder facing the substrate and/or in both sides of the substrate holder and/or in a surface of a receptacle of the substrate holder, one or several channels are provided that are connected to one or several bores for passing a cooling gas flow therethrough.

29. The substrate holder according to claim 22, wherein the substrate has a front side facing the substrate and a back side facing away from the substrate, wherein the back side and/or the front side has one or several sealing surfaces and/or seals.

30. The substrate holder according to claim 22, comprising seals comprised of solid polymers and/or solid metals or comprised of coatings made of polymers and/or

metals, wherein the seals are provided locally or at several locations.

31. The substrate holder according to claim 22, wherein between the substrate and the substrate holder and/or between a receptacle for the substrate holder and the substrate holder one or several intermediate spaces are present for cooling with a cooling gas.

32. The substrate holder according to claim 22, wherein a cooling gas is guided in a circuit and is reusable.

33. The substrate holder according to claim 22, wherein in a receptacle for the substrate holder one or several sealing surfaces and/or seals are provided.

34. The substrate holder according to claim 22, having a front side facing the substrate and a back side, wherein at least one of the front side and the back side of the substrate holder and/or a receptacle for the substrate holder is textured by sawing, milling, turning, grinding and/or cutting, for example, by laser beam and/or electron beam, wet-chemical etching, plasma etching, or sandblasting, preferably in a grid shape, in order to provide a cooling surface area as large as possible for a cooling gas.



35. The substrate holder according to claim 34, wherein the front side and/or the back side of the substrate holder and/or the receptacle is machined by grinding and/or lapping and/or polishing or milling or turning in order to generate flatness and a plane-parallel configuration.

36. The substrate holder according to claim 22, having a front side facing the substrate and a back side, wherein in at least one of the front side and the back side of the substrate holder locally, at certain locations, or everywhere one or several magnetic metals and/or non-magnetic metals, metal alloys and/or metalloids are introduced in the form of solid bodies and/or the front side and/or the back side of the substrate holder are coated locally, at certain locations or everywhere with one or several magnetic metals and/or non-magnetic metals, metal alloys and/or metalloids.

37. The substrate holder according to claim 22, having a front side facing the substrate and a back side, wherein in at least one of the front side and the back side one or several unipolar or/and multi-polar electrodes are present.

38. The substrate holder according to claim 22, wherein a receptacle for the substrate holder comprises one or several magnets.

39. The substrate holder according to claim 22, manufactured by glass multi-layer technology and/or ceramic multi-layer technology and/or plastic multi-layer technology.

40. The substrate holder according to claim 22, comprised of at least one of the materials selected from the group consisting of ceramics, glass material, photo-texture glass, glass ceramics, semiconductor materials, and plastic materials, and further comprising metals and/or metal alloys.

41. The substrate holder according to claim 22, having a front side facing the substrate and a back side, wherein at least one of the front side and the back side and/or a receptacle for the substrate holder is fine-machined by at least one of polishing, grinding, lapping, milling, and turning for achieving a high gas seal-tightness.

42. The substrate holder according to claim 22, configured to be electrically supplied, electrically charged and/or electrically discharged continuously or discontinuously.

43. A mobile transportable electrostatic substrate holder, having a diameter and/or edge lengths greater by 0.1 mm up to 150 mm, locally, at certain locations, or

everywhere, than a diameter and/or edge lengths of a substrate to be transported.

44. A substrate holder according to claim 43, wherein an exposed area of the substrate holder that is not covered by the substrate to be transported is up to 30 mm thicker or up to 10 mm thinner, locally, at certain locations, or everywhere, than a covered area of the substrate holder covered by the substrate.

45. A substrate holder according to claim 43, having one or several holes and/or perforations in order to increase a holding force of the substrate holder acting on the substrate by utilizing the substrate holder simultaneously as a vacuum holder.

46. The substrate holder according to claim 43, wherein the substrate holder and/or a receptacle for the substrate holder has one or several bores and/or perforations for passing a gas therethrough for cooling the substrate and/or for passing lifting and/or contact pins and/or sensors therethrough.

47. The substrate holder according to claim 43, wherein the substrate holder and/or the substrate is electrically

charged and/or electrically discharged inside or outside of a processing machine through contact pins.

48. The substrate holder according to claim 43, wherein the substrate holder and/or the substrate is moveable by lifting pins.

49. The substrate holder according to claim 43, wherein in a front side of the substrate holder facing the substrate and/or in both sides of the substrate holder and/or in a surface of a receptacle of the substrate holder, one or several channels are provided that are connected to one or several bores for passing a cooling gas flow therethrough.

50. The substrate holder according to claim 43, wherein the substrate has a front side facing the substrate and a back side facing away from the substrate , wherein the back side and/or the front side has one or several sealing surfaces and/or seals.

51. The substrate holder according to claim 43, comprising seals comprised of solid polymers and/or solid metals or comprised of coatings made of polymers and/or metals, wherein the seals are provided locally or at several locations.

52. The substrate holder according to claim 43, wherein between the substrate and the substrate holder and/or between a receptacle for the substrate holder and the substrate holder one or several intermediate spaces are present for cooling with a cooling gas.

53. The substrate holder according to claim 43, wherein a cooling gas is guided in a circuit and is reusable.

54. The substrate holder according to claim 43, wherein in a receptacle for the substrate holder one or several sealing surfaces and/or seals are provided.

55. The substrate holder according to claim 43, having a front side facing the substrate and a back side, wherein at least one of the front side and the back side of the substrate holder and/or a receptacle for the substrate holder is textured by sawing, milling, turning, grinding and/or cutting, for example, by laser beam and/or electron beam, wet-chemical etching, plasma etching, or sandblasting, preferably in a grid shape, in order to provide a cooling surface area as large as possible for a cooling gas.

56. The substrate holder according to claim 55, wherein the front side and/or the back side of the substrate holder

and/or the receptacle is machined by grinding and/or lapping and/or polishing or milling or turning in order to generate flatness and a plane-parallel configuration.

57. The substrate holder according to claim 43, having a front side facing the substrate and a back side, wherein in at least one of the front side and the back side of the substrate holder locally, at certain locations, or everywhere one or several magnetic metals and/or non-magnetic metals, metal alloys and/or metalloids are introduced in the form of solid bodies and/or the front side and/or the back side of the substrate holder are coated locally, at certain locations or everywhere with one or several magnetic metals and/or non-magnetic metals, metal alloys and/or metalloids.

58. The substrate holder according to claim 43, having a front side facing the substrate and a back side, wherein in at least one of the front side and the back side one or several unipolar or/and multi-polar electrodes are present.

59. The substrate holder according to claim 43, wherein a receptacle for the substrate holder comprises one or several magnets.

60. The substrate holder according to claim 43, manufactured by glass multi-layer technology and/or ceramic multi-layer technology and/or plastic multi-layer technology.

61. The substrate holder according to claim 43, comprised of at least one of the materials selected from the group consisting of ceramics, glass material, photo-texture glass, glass ceramics, semiconductor materials, and plastic materials, and further comprising metals and/or metal alloys.

62. The substrate holder according to claim 43, having a front side facing the substrate and a back side, wherein at least one of the front side and the back side and/or a receptacle for the substrate holder is fine-machined by at least one of polishing, grinding, lapping, milling, and turning for achieving a high gas seal-tightness.

63. The substrate holder according to claim 43, configured to be electrically supplied, electrically charged and/or electrically discharged continuously or discontinuously.